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Conceptualising Myths in Sustainability Education: A Problem-Centred Expert Interview Study

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SCHOLARONE MANUSCRIPTS

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Abstract

Purpose – Sustainability education (SE) is shaped not only by research and theory but by persistent beliefs about its purpose, scope, and pedagogies that lack empirical or theoretical grounding. This study examines the emerging phenomenon of myths in and about sustainability education (MYTHSE): their characteristics, origins, consequences, and strategies for addressing them.

Design/methodology/approach – A pre-registered qualitative study with seven international experts spanning sustainability education, cognitive psychology, and misinformation research. Semi-structured, podcast-based interviews were analysed through qualitative content analysis combining inductive and deductive coding.

Findings – Experts characterised MYTHSE as plausible, socially reinforced claims that narrow SE's transformative ambitions, and described as widespread rather than marginal in SE discourse. Examples include equating SE with environmental education and assuming factual knowledge alone changes behaviour. Causes span cognitive heuristics, cultural narratives, and institutional path dependencies; consequences include reductive pedagogies, curricular fragmentation, and disengagement from complex socio-ecological issues. Experts agreed that fact correction is insufficient and emphasised prebunking, mental immunity, and critical thinking dispositions.

Originality/value – Among the first expert-based studies on MYTHSE. It introduces a myth / contested classification, positions MYTHSE as a distinct research agenda, and identifies evidence-informed strategies for addressing these beliefs.

Research limitations/implications – The small purposive sample and cross-sectional design limit generalisation, but the study provides conceptual and methodological foundations for future research, SE practice, and policy.

Keywords: sustainability education; educational myths; expert interviews; MYTHSE; qualitative content analysis; misinformation; higher education.

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1. Introduction

Sustainability education (SE) is expected to equip learners with the competencies needed to address current wicked and grand challenges (Leal Filho et al., 2024; Macintyre et al., 2025). By fostering systems thinking, integrated problem-solving and value-informed judgement, SE is widely framed as a driver of societal transformation. Yet, like many educational fields, SE is shaped not only by research and theory but also by widely shared beliefs. Work on educational myths shows that such beliefs – plausible claims that lack theoretical or empirical grounding – can distort how educational practices are understood, designed, and enacted (De Bruyckere et al., 2020; Lilienfeld et al., 2010).

Comparable dynamics operate in SE. Assumptions such as equating SE with environmental education, treating factual instruction as the primary lever for behavioural change, or dismissing SE as political indoctrination narrow the field's scope and obscure its transformative ambitions (Macintyre et al., 2025; Sterling, 2025). These beliefs shape curricular decisions, institutional strategies, and public expectations – often without being named or challenged. Despite their apparent prevalence, *myths in and about sustainability education* (MYTHSE) have received no systematic scholarly attention. SE research has addressed conceptual ambiguity, depoliticization, and instrumentalization (Costa et al., 2025), but has not treated socially persistent, epistemically weak claims as a distinct analytic category in their own right (Siegel, 2026).

MYTHSE are not merely factual inaccuracies. They reflect deeper cognitive tendencies, socio-affective functions, cultural narratives, and institutional path dependencies that make them resilient to simple correction and consequential for practice. Understanding how MYTHSE arise, what sustains them, and how they might be addressed requires scholars who can bring disciplinary depth to a phenomenon cutting across sustainability science, educational psychology, and misinformation research. This study therefore employs problem-centred expert interviews (Döringer, 2021; Witzel and Reiter, 2012), treating experts not as ultimate authorities but as catalysts for conceptual clarification and field structuring (Worsnip et al., 2025).

Three objectives and corresponding research questions guide the study:

- **O1 / RQ1:** Clarify and conceptualise MYTHSE – *How do experts from relevant disciplines conceptualise myths in and about sustainability education?*
- **O2 / RQ2:** Identify prevalent potential MYTHSE – *Which potential MYTHSE do experts perceive as prevalent, and how do these typically manifest in educational contexts?*
- **O3 / RQ3:** Examine origins, consequences, and intervention strategies – *What do experts identify as key origins, consequences, and possibilities for prevention and intervention?*

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2. Theory

2.1 Myths in and About Sustainability Education (MYTHSE)

Defining MYTHSE. Research in educational psychology documents how scientifically unsupported yet widely believed assumptions about teaching and learning shape instructional decisions and institutional policy despite counterevidence (De Bruyckere et al., 2020; Kirschner et al., 2025; Lilienfeld et al., 2010). In this study, myths in and about sustainability education (MYTHSE) refer to widely held but unfounded, oversimplified, or misleading beliefs about the aims, content, pedagogies, or societal role of SE. MYTHSE are best situated on a continuum from well-supported claims to clearly misleading overgeneralisations, with a contested grey zone of plausible but unsettled beliefs – a middle ground particularly relevant in SE, where normative and empirical dimensions intertwine (Costa et al., 2025; De Bruyckere et al., 2020; Siegel, 2026).

Situating MYTHSE among adjacent concepts. Myth, misinformation, and misconception are often used interchangeably, yet they operate at different analytic levels (e.g., Steins et al., 2022). Misinformation and disinformation denote properties of *messages*: false or misleading content shared without or with intent to deceive (Ecker et al., 2022; van der Linden, 2023). Misconceptions denote properties of *individual cognition*: coherent yet flawed mental models that, where they survive repeated refutation, persist as "zombie concepts" (Sinatra and Jacobson, 2019). Myths, by contrast, denote *socially stabilised patterns of shared meaning*: beliefs that circulate as taken for granted in professional discourse and institutional routine (De Bruyckere et al., 2020; Lilienfeld et al., 2010). These levels interact without collapsing into one another: misinformation can serve as a vehicle through which myths spread, and individual misconceptions can harden into myths once socially normalised – yet message accuracy, cognitive structure, and social stabilisation call for different diagnoses and responses. Within this landscape, MYTHSE differ from general educational myths, which concern learning and teaching processes, and from environmental or scientific misconceptions, which concern domain-specific factual knowledge: their object is SE itself.

MYTHSE in SE scholarship. SE is not a settled field. Competing frameworks – education *about*, *for*, and *as* sustainability; ESD 1/2/3; weak versus strong sustainability; transformative versus adaptive learning — carry distinct assumptions about purpose, method, and values (Macintyre et al., 2025; Pettig and Singer-Brodowski, 2024; Sterling, 2024). This pluralism is productive but creates conditions in which reductive framings pass as adequate: that knowledge transmission drives behavioural change (Singer-Brodowski et al., 2025); that SE must be politically neutral or, conversely, constitutes indoctrination (Biesta, 2022); or that SE's transformative claims are empirically self-evident when they are not (Sterling, 2025). Addressing MYTHSE therefore means attending not only to myths held by practitioners and policymakers but also to the field's own taken-for-granted assumptions (Brookfield, 2017).

Origins, functions, persistence, and intervention. Cognitive factors – confirmation bias, intuitive mental models, illusory-truth effects – make simplified claims attractive and durable

(Ecker et al., 2022; Kirschner et al., 2025; Sinatra and Jacobson, 2019). Socio-affective and cultural dynamics further stabilise them by embedding myths in professional identity and institutional routine. Myths are not uniformly dysfunctional: as cognitive-cultural simplifications, they can lower engagement thresholds and provide shared language – which is precisely why corrective information alone rarely works (Sinatra and Jacobson, 2019). Unexamined myths nonetheless constrain curriculum design, encourage reductive pedagogies, and undermine evidence-informed teaching (Lilienfeld et al., 2010). Effective responses surface underlying assumptions, engage the appeal of specific claims, and strengthen dispositions for critical engagement through prebunking, metacognitive training, and refutational teaching (Danielson et al., 2025; Norman et al., 2024).

2.2 The Role of Experts in Investigating MYTHSE

Given the interdisciplinary and contested nature of SE (Costa et al., 2025; Macintyre et al., 2025), expert perspectives are necessary for conceptualising the phenomenon and field of MYTHSE (Bogner et al., 2018). Expertise is understood here not as infallible authority but as domain-specific knowledge and interpretive capacity developed through sustained scholarly engagement.

Engaging experts requires a stance of critical, pluralistic, and reflexive deference (Worsnip et al., 2025). Expert judgement warrants consideration yet must remain open to scrutiny given the risks of authority bias and disciplinary blind spots (Sagan, 1997) – risks particularly relevant in education, where myths can be reinforced by unreflective appeals to expertise as easily as by scepticism toward it. The goal is therefore not to adopt expert views wholesale but to interpret them in relation to broader theoretical discourse and empirical evidence.

In emerging fields such as MYTHSE, *thinking with experts* serves additional functions. Experts surface underlying conceptual structures, highlight tacit assumptions, and articulate connections that may remain opaque to novices (Von Soest, 2023). Their capacity to synthesise across disciplinary traditions (Kirschner et al., 2025) is especially relevant in SE, where no single field holds interpretive authority over the phenomenon.

Expert interviews are therefore well suited to early-stage investigations of this kind, supporting reflexive and dialogical inquiry in which expert knowledge is treated as situated and interpretable rather than definitive (Bogner et al., 2018; Döringer, 2021; Von Soest, 2023).

3. Methods

3.1 Design

This study employed a qualitative-explorative, cross-sectional design to generate in-depth insights into the emerging and under-researched phenomenon of MYTHSE. Methodologically, it draws on the problem-centred expert interview approach (Döringer, 2021), which combines the expert interview (Bogner et al., 2018) and the problem-centred interview (Witzel and

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Reiter, 2012). This approach is particularly suited when prior research is limited but informed judgement is essential for understanding mechanisms, emerging patterns, or contested discourses – conditions that characterise the current state of MYTHSE research. To strengthen transparency and research integrity, the study was pre-registered on the Open Science Framework prior to data collection (Haven and Van Grootel, 2019; https://osf.io/2zf67).

3.2 Data Collection

Sampling and Sample

A purposive, criterion-based sampling strategy was used to recruit internationally recognised experts whose work substantially engages with sustainability education, educational psychology, misinformation research, or related domains. Selection criteria included demonstrated scholarly contributions to relevant debates, disciplinary relevance to sustainability education or belief formation, sustained research and higher education experience, and willingness to participate in a recorded, publicly accessible interview. The goal was not statistical representativeness but conceptual breadth and disciplinary complementarity across sustainability education, higher education research, cognitive psychology, and science communication. In line with the exploratory design, the study aimed for information sufficiency and conceptual coverage. Table 1 describes the final sample of senior scholars from five countries across three continents.

Table 1. Overview of Interviewed Experts

#	Interviewed Expert	Affiliation	Country	Academic Discipline / Expertise	Duration (min)
1	Prof. Dr. David Orr	Oberlin College	USA	Environmental Studies and Politics	84
2	Prof. Dr. Gale Sinatra	University of Southern California	USA	Educational Psychology	47
3	Prof. Dr. Kerry Shephard	University of Otago	New Zealand	Higher Education; Sustainability Education	68
4	Dr. John Cook	University of Melbourne	Australia	Misinformation Research; Cognitive Psychology	75
5	Prof. Dr. Marco Rieckmann	University of Vechta	Germany	Higher Education Development	78
6	Assoc.-Prof. Melanie Trecek-King	Massasoit Community College	USA	Biology; Science Education	74
7	Prof. Dr. Daniella Tilbury	St Catharine's College, University of Cambridge	UK	Geography Education; Sustainability Education	61

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Interview Guide and Conduct

The interview guide was developed iteratively, drawing on research on educational myths (De Bruyckere et al., 2020), sustainability education (Sterling, 2024), and misinformation (Norman et al., 2024). A semi-structured format ensured comparability across interviews while remaining open to emerging insights (Döringer, 2021). A core guide addressed six areas: definitions of sustainability education and educational myths; prevalence, origins, and consequences of MYTHSE; approaches to structuring a mythology of sustainability education (Lilienfeld et al., 2010); strategies for addressing myths; and rapid evaluation of selected MYTHSE (see Supplement 3). The guide was pre-tested in two trial interviews, refined for clarity, and tailored to each expert's disciplinary background.

Interviews were conducted between February 2024 and February 2025 via Zoom (Archibald et al., 2019), lasted an average of 69.6 minutes (SD = 11.4; range: 47–84 min), and were audio-visually recorded after obtaining informed consent. The author, an experienced qualitative researcher in sustainability and higher education, conducted all interviews and also served as podcast host. Field notes were taken immediately after each interview using a structured template capturing atmosphere, notable non-verbal cues, emergent themes for follow-up, and the author's immediate interpretive impressions.

3.3 Data Preparation and Analysis

Data Preparation

Interviews were fully transcribed verbatim using the local LLM *noScribe* (Version 0.4.1; Wollin-Giering et al., 2024). All transcripts and field notes were imported into *MAXQDA 2026* for thematic qualitative content analysis (Kuckartz and Rädiker, 2023). Participants additionally consented to be identified by name in publications and in the accompanying podcast; anonymisation was therefore not applied.

Category Development and Refinement

The analysis combined deductive structuring with inductive refinement across three iterative coding cycles. An initial frame derived from the research questions, interview guide, and relevant literature covered six main categories: (1) conceptualisations, (2) examples and prevalence, (3) origins, (4) persistence, (5) consequences, and (6) strategies. Cycle one applied this frame to all seven transcripts; cycle two introduced inductive sub-categories for segments the frame did not capture; cycle three consolidated overlapping codes and resolved boundary cases. Statements about "infinite growth," "human dominion over nature," and "humans as separate from nature," for example, were initially coded under *cultural drivers* but, on cross-case comparison, reclassified into a distinct *Foundation Myths / Root Assumptions* subcategory to reflect their generative function in stabilising secondary myths — a documented inductive

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extension of the pre-registered frame. The final codebook contained 411 codes across three hierarchical levels beneath the six main categories, with definitions, inclusion and exclusion criteria, anchor examples, and coding rules (Supplement 5). 62 analytic memos — at transcript level (within-case interpretation) and category level (development and boundary tracking) — accompany the codebook (Supplement 5).

Analytic Rigor, Bias Mitigation, and AI Support

Given the study's exploratory aim and the interpretive complexity of expert discourse, the analysis prioritised consensual and discursive validation over coefficient-based intercoder reliability — an emphasis Kuckartz and Rädiker (2023) consider more appropriate to QCA than the transfer of psychometric standards from quantitative content analysis, since coding units are not fixed in advance. Two coders — the author and a trained student research assistant — independently coded the first two interviews at the subcategory level, working with an initial version of the codebook and free segmentation. Divergent codings were treated not as errors but as analytic prompts: each was discussed, category definitions and anchor examples were sharpened where ambiguity surfaced, and the resulting refinements propagated across the corpus to yield a consensus codebook.

Three further procedures supported rigor. Findings were triangulated against existing literature on educational myths, misinformation, and sustainability education. Rival and alternative readings were actively pursued, and transcripts were revisited whenever interpretations risked over-alignment with the prior conceptual framework — a particular concern given the author's dual role as researcher and podcast host, which affords field familiarity but entails interpretive proximity (further addressed in §5.3). Finally, a locally deployed open-weight model (*Mixtral 8x22B-Instruct* via Ollama) was used during category refinement to generate alternative thematic clusterings and stress-test category boundaries; outputs functioned as heuristic prompts only, with every retained category anchored in author-verified textual evidence. No data or manuscript content was uploaded to cloud-based AI services, and AI tools were not used to draft, interpret, or generate citations, tables, or figures. The author bears sole responsibility for the work (Hitch, 2024; Kuckartz and Rädiker, 2023).

4. Results

The seven experts engaged with MYTHSE from distinct disciplinary positions: sustainability and higher education (Orr, Rieckmann, Shephard, Tilbury), cognitive and educational psychology (Sinatra), misinformation and climate communication (Cook), and science and critical-thinking education (Trecek-King). Coding yielded 411 total codings including 18 segments flagged as auxiliary (e.g., best quotes); 387 were included in the substantive analysis reported below across the six categories defined in §3.3 (full descriptions in Supplement 5), with highest densities in *Prevalence and Examples* (n = 127) and *Dealing with MYTHSE* (n = 101) — indicating that expert attention centred on concrete cases and intervention strategies.

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Findings are reported by research question in §4.1–4.3. Transcript references follow the convention I[#]-[Surname], p. [page] (e.g., I4-Cook, p. 1 = Interview 4 with Cook, transcript page 1; numbering as in Table 1). Quotations were selected for conceptual clarity and cross-case representativeness; counter-examples and divergent positions (notably Shephard's terminological reservation, §4.1) are reported alongside majority patterns.

4.1 Conceptualising MYTHSE: Terminology and Defining Properties (RQ1)

Terminological precision varied with disciplinary background. Cook distinguished *misinformation* — "false information, regardless of the intent" (I4-Cook, p. 1) — from *disinformation* as intentionally deceptive, while cautioning against over-refined definitions (see also I2-Sinatra, p. 2; I6-Trecek-King, p. 2). Sinatra distinguished *misconceptions* (individual mental models) from *myths* (widely shared beliefs that persist despite corrective evidence). Trecek-King defined myths as "widely believed, but not true" (I6-Trecek-King, p. 2), explicitly excluding isolated misunderstandings.

Two participants introduced terminological reservations without rejecting the phenomenon. Shephard preferred *misunderstandings* where contestation reflects disciplinary difference rather than error (I3-Shephard, p. 1). Sinatra preferred *misconception* for scientific content (I2-Sinatra, p. 2). Both engaged substantively with MYTHSE throughout.

Interviewees distinguished MYTHSE from adjacent categories. Sinatra identified *general educational myths* — learning styles as "the most prolific zombie concept in education" (I2-Sinatra, p. 4) — as concerning teaching and learning rather than sustainability content. A further category emerged inductively: *foundational myths* or "root assumptions" (I1-Orr, p. 2) — cultural beliefs about human mastery of nature and endless growth that, in Orr's framing, form the substrate within which MYTHSE take shape (I1-Orr, p. 7). Tilbury and Rieckmann endorsed this distinction.

Across interviews, four recurrent properties emerged. *Partial truth and oversimplification* (6/7): myths rarely consist of pure falsehood but contain, as Tilbury put it, "an ounce of truth" (I7-Tilbury, p. 7) that gets oversimplified. Shephard was the exception, reframing contested beliefs as disciplinary disagreements. *Intuitive plausibility* (5/7): because scientific knowledge is often counterintuitive (I2-Sinatra, p. 14), simpler schema-consistent explanations occupy the gap, often reinforced by scientific-sounding language or familiar metaphors (I6-Trecek-King, p. 2; I7-Tilbury, p. 7). *Durability and social circulation* (6/7): Cook identified the illusory-truth effect as the central reinforcement mechanism (I4-Cook, p. 3); Sinatra described beliefs as embedded in webs where revising one claim destabilises adjacent commitments (I2-Sinatra, p. 6). *Normative framing disguised as fact* (5/7): claims about what SE is or should achieve circulate as empirically settled rather than normatively contested (I1-Orr, p. 2; I4-Cook, p. 4; I5-Rieckmann, p. 1).

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4.2 Prevalence and Examples of MYTHSE (RQ2)

Prevalence. All seven participants characterised MYTHSE as widespread and structurally embedded in SE discourse. Tilbury described the discourses underpinning education for sustainability as "packed with myths" spanning educational, environmental, and broader ideological registers (I7-Tilbury, p. 2). Professional expertise was not described as providing immunity: Cook and Tilbury reported encountering misleading assumptions across academic and policy discourse (I4-Cook, p. 3; I7-Tilbury, p. 2); Rieckmann identified teacher education as a site where unexamined beliefs are reproduced rather than interrogated (I5-Rieckmann, pp. 4–5).

Examples. All participants named multiple candidate MYTHSE, though not every example in Table 2 was raised in every interview. Two types were reported: (i) claims participants considered straightforwardly misleading and (ii) *contested* claims containing a grain of truth that becomes problematic when overgeneralised or deployed rhetorically to delegitimise SE.

The highest-frequency examples were *SE is primarily about conveying content* (#3) and *individual actions of sustainability educators do not matter* (#18), each raised by all 7 participants. Trecek-King articulated the assumption underlying #3: education has long treated resistance as an information deficit, whereas change depends on underlying motivations and values (I6-Trecek-King, p. 12). The conflation of SE with environmental education (#1) was named by 6/7 (I5-Rieckmann, p. 2; I7-Tilbury, p. 1). *SE must be politically neutral* (#4) and *only ideally sustainable lecturers should teach SE* (#5) were each raised by 5/7. Three single-mention candidates (#8, #12, #15) are retained as *Contested* on the basis of single-participant engagement.

For contested cases (#4, #5, #6, #8, #11, #12, #14, #15, #17), participants described a shared pattern: a legitimate underlying concern becomes a myth when absolutised or deployed rhetorically. Cook applied this directly to educator lifestyle (#5): "a myth with a grain of truth" (I4-Cook, p. 12). Three thematic clusters recurred — *scope and purpose* of SE, *pedagogical means*, and *responsibility and agency* — described as mutually reinforcing (see Table 2).

Table 2. Discussed Potential Examples of MYTHSE

#	Potential MYTHSE	*n*	Classification	Exemplary Expert References
1	"SE is mere environmental education"	6	Myth	I1-Orr; I2-Sinatra; I3-Shephard; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
2	"SE alone will save the planet / humanity"	2	Myth	I2-Sinatra; I4-Cook
3	"SE is primarily about conveying content (ESD 1)"	7	Myth	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I5-Rieckmann; I6-Trecek-

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#	Potential MYTHSE	*n*	Classification	Exemplary Expert References
				King; I7-Tilbury
4	"SE must be politically neutral"	5	Contested	I1-Orr; I3-Shephard; I4-Cook; I5-Rieckmann; I7-Tilbury
5	"Only lecturers who act ideally sustainably should teach SE"	5	Contested	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I5-Rieckmann
6	"SE's purpose is to make students eco-warriors"	4	Contested	I2-Sinatra; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
7	"The higher educated people are, the more sustainably they think/act"	2	Myth	I1-Orr; I6-Trecek-King
8	"SE is too complex for children"	1	Contested	I7-Tilbury
9	"Direct instruction is useless in SE"	3	Myth	I2-Sinatra; I4-Cook; I5-Rieckmann
10	"SE is not urgent — we have time"	2	Myth	I1-Orr; I2-Sinatra
11	"SE is just education done right – old wine in new wineskins"	3	Contested	I3-Shephard; I5-Rieckmann; I7-Tilbury
12	"SE is just another issue to be added to an overcrowded curriculum"	1	Contested	I3-Shephard
13	"SE is just a hype / passing fad"	2	Myth	I1-Orr; I2-Sinatra
14	"SE is not my cup of tea / belongs in a separate subject"	2	Contested	I1-Orr; I4-Cook
15	"SE should focus only on youth (forget adults)"	1	Contested	I7-Tilbury
16	"It's too late for SE"	3	Myth	I1-Orr; I2-Sinatra; I4-Cook
17	"There is no consensus on what SE is"	3	Contested	I1-Orr; I5-Rieckmann; I7-Tilbury
18	"Individual actions of sustainability educators do not matter"	7	Myth	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury

Note. *n* = number of experts (of 7) engaging with the example; references identify them.

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Classifications reflect participants' own characterisations and are preliminary. **Classification rule.** *Myth*: all engaging participants characterised the claim as misleading. *Contested*: participants diverged in characterisation, typically because a legitimate concern becomes problematic only when absolutized or deployed rhetorically; single-mention candidates are retained as tentative under this label, pending broader testing.

4.3 Origins, Persistence, Consequences, and Strategies for Dealing with MYTHSE (RQ3)

4.3.1 Origins of MYTHSE

Participants attributed MYTHSE to multiple interacting drivers rather than a single source (Table 3).

Cognitive drivers (5/7) were prominent. Because sustainability phenomena are complex and counterintuitive, educators and learners default to heuristic reasoning; Trecek-King described cognition as operating predominantly in 'autopilot' mode (I6-Trecek-King, p. 5). Rieckmann and Shephard added a transmission mechanism: research findings become distorted as they circulate through teacher education and policy documents, hardening into universal rules (I3-Shephard, pp. 7–8; I5-Rieckmann, p. 9).

Socio-affective drivers (6/7) were equally pervasive. Identity-protective reasoning, dissonance reduction, and solution aversion were described as making MYTHSE psychologically rewarding to hold and professionally costly to challenge (e.g., I1-Orr, p. 3; I2-Sinatra, p. 5; I4-Cook, p. 5; I7-Tilbury, p. 8).

Institutional conditions were named by 6/7 participants. Rieckmann and Tilbury pointed to fragmented curricula and limited professional development (I5-Rieckmann, p. 6; I7-Tilbury, p. 4); Orr described disciplinary silos as obstructing the integrative engagement needed to surface foundational assumptions (I1-Orr, pp. 2–3). Trecek-King distinguished a small group of actors actively promoting misleading narratives from the larger group of educators who reproduce myths without deliberate intent (I6-Trecek-King, p. 4).

Cultural and foundational narratives (5/7) formed a further cluster. Orr described deep-seated assumptions — human dominion, faith in technological progress, endless growth — as a cultural plausibility structure within which secondary MYTHSE form (I1-Orr, p. 2). Media and popular-science formats were described as reinforcing such myths through reductionist storytelling (I6-Trecek-King, p. 5; I7-Tilbury, p. 2).

4.3.2 Persistence of MYTHSE

Persistence was treated as analytically distinct from origins (Table 3). Two cross-case observations stand out.

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First, Orr and Trecek-King explicitly rejected the information-deficit explanation: MYTHSE do not persist because people lack knowledge (I1-Orr, p. 3; I6-Trecek-King, p. 12). Second, persistence was described as functionally rational rather than merely cognitive: MYTHSE sustain identity and professional legitimacy, making them socially rewarding to repeat and professionally costly to challenge (I1-Orr, p. 3; I2-Sinatra, p. 5; I7-Tilbury, p. 8). Sinatra and Trecek-King added that beliefs sit within interconnected webs of meaning, such that revising one claim risks destabilising adjacent commitments (I2-Sinatra, p. 6; I6-Trecek-King, p. 7).

Two specific mechanisms were named. Trecek-King identified *thought-terminating clichés* — profound-sounding phrases that foreclose further inquiry (I6-Trecek-King, p. 11). Cook identified *controversy aversion* as a reason academics remain reluctant to engage publicly with misinformation (I4-Cook, p. 3).

4.3.3 Consequences of MYTHSE

Institutional effects featured in every interview, pedagogical effects in most; societal effects were raised less often but framed as the gravest.

Pedagogically, Sinatra articulated the motivational cost: spreading "doomerism" demotivates action and becomes self-fulfilling (I2-Sinatra, p. 3). Cook framed the field-level loss as preventing educators from fulfilling education's potential for societal impact (I4-Cook, p. 4).

Institutionally, Tilbury characterised prevailing practice as superficial: communicating facts without questioning their origins — "a massive myth that is distorting engagement with this agenda" (I7-Tilbury, p. 4). Shephard reported that assumptions about sustainability being unrelated to a given discipline lead faculty to self-exempt, such that transformation proceeds despite rather than with academics (I3-Shephard, p. 4). Rieckmann linked MYTHSE that reduce SE to knowledge transmission with the displacement of evidence-informed practice (I5-Rieckmann, p. 5).

At the societal level, Cook and Orr linked MYTHSE to discourses of delay — symbolic action, individualised responsibility, postponed structural change (I1-Orr, p. 5; I4-Cook, p. 6). Orr additionally described disciplinary silos as "little boxes" obstructing the integrative reasoning sustainability requires (I1-Orr, p. 2).

4.3.4 Strategies for Dealing with MYTHSE

All 7 participants agreed that fact correction alone is insufficient (e.g., I2-Sinatra, pp. 7–8; I6-Trecek-King, p. 12): effective strategies engage the cognitive functions and social embeddedness of beliefs, not only their factual inaccuracy.

Critical thinking and epistemic competence was the most prominent strategy (e.g., I7-Tilbury, p. 7). Trecek-King drew on Norman's concept of *mental immunity* — habitual scepticism, source evaluation, and tolerance for uncertainty as protective capacities. Her inoculation approach

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exposes learners to FLICC techniques (fake experts, logical fallacies, impossible expectations, cherry-picking, conspiracy theories) before exposure to misinformation, so recognising manipulative argument structures becomes routine (I6-Trecek-King, p. 9). She also identified intellectual humility and metacognitive awareness of one's own susceptibility as foundational preconditions (I6-Trecek-King, p. 10).

Debunking and refutational teaching was endorsed by all 7. Cook distinguished fact-based from *logic-based* debunking, arguing that targeting the underlying fallacy produces more transferable skills than correcting individual claims — tobacco-related training in logic-based debunking transferred to climate misinformation in his own experiments (I4-Cook, pp. 7–8, 11). The *fact–myth–fallacy–fact* structure (related to the "truth sandwich") — lead with the correct claim, briefly acknowledge the myth, explain the fallacy, restate the fact — reduces the risk of amplifying the myth through repetition (I4-Cook, p. 8). Cook and Sinatra noted that direct confrontation provokes resistance when myths are identity-connected; starting with less charged examples — science misinformation rather than attacks on sustainability educators — proved more tractable (I2-Sinatra, p. 4; I4-Cook, p. 5).

Prebunking was identified by Trecek-King, Sinatra, and Tilbury (3/7) as potentially more effective than post-hoc correction. Trecek-King described active inoculation exercises in which students use FLICC techniques to construct misinformation themselves, producing a deeper grasp of manipulative argument structures than passive exposure (I6-Trecek-King, p. 9).

Teacher education and structural conditions were named by Rieckmann and Shephard as primary leverage points beyond individual classrooms (I3-Shephard, p. 6; I5-Rieckmann, p. 6). Orr and Rieckmann added that cognitive interventions alone cannot address the structural and political conditions normalising unsustainability; in Orr's reading of Meadows's "places to intervene in a system," mindset change sits lower in the leverage hierarchy than policy- and paradigm-level change (I1-Orr, p. 14; I5-Rieckmann, p. 10).

Table 3. Overview of origins, persistence, consequences, and strategies related to MYTHSE

Category	Theme	*n*	Key Mechanisms / Examples	Expert References
Origins	Cognitive drivers	5/7	Heuristic reasoning; system-one dominance; distortion of findings through circulation; false dichotomies	I2-Sinatra; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Socio-affective drivers	6/7	Identity threat; motivated reasoning; dissonance reduction; solution aversion	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I6-Trecek-King; I7-Tilbury

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Category	Theme	*n*	Key Mechanisms / Examples	Expert References
	Institutional conditions	6/7	Fragmented curricula; inadequate teacher education; disciplinary silos; systemic reproduction	I1-Orr; I2-Sinatra; I3-Shephard; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Cultural / foundational narratives	5/7	Deep-seated assumptions (growth, dominion, progress); media simplification; ideological framing	I1-Orr; I2-Sinatra; I4-Cook; I6-Trecek-King; I7-Tilbury
Persistence	Cognitive reinforcement	5/7	Illusory-truth effect; webs of interconnected belief; high psychological cost of revision	I2-Sinatra; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Socio-affective stabilisation	5/7	Functional rationality; thought-terminating clichés; controversy aversion; identity protection	I1-Orr; I2-Sinatra; I4-Cook; I6-Trecek-King; I7-Tilbury
	Structural transmission	5/7	Foundational narratives reproduced across educator generations; curricula and assessment as carriers	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I7-Tilbury
Consequences	Individual / pedagogical	5/7	Doomerism; fear-based teaching; transmission overreliance; illusions of effectiveness	I2-Sinatra; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Institutional	7/7	Superficial practice; box-ticking compliance; marginalisation of critical pedagogy; faculty self-exemption	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury

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Category	Theme	*n*	Key Mechanisms / Examples	Expert References
	Societal	4/7	Discourses of delay; individualisation of responsibility; postponement of structural change	I1-Orr; I4-Cook; I6-Trecek-King; I7-Tilbury
Strategies	Critical thinking / epistemic competence	5/7	Mental immunity; FLICC; intellectual humility; source evaluation; metacognitive awareness	I2-Sinatra; I3-Shephard; I4-Cook; I6-Trecek-King; I7-Tilbury
	Debunking / refutational teaching	7/7	Logic-based approaches; fact–myth–fallacy–fact structure; non-triggering framing	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Prebunking / inoculation	3/7	Active inoculation; FLICC-based creation tasks; epistemic resilience before exposure	I2-Sinatra; I6-Trecek-King; I7-Tilbury
	Teacher education / structural	3/7	Initial teacher education as leverage point; limits of cognitive-only approaches; political and structural preconditions	I1-Orr; I5-Rieckmann; I7-Tilbury

Note. *n* = number of expert participants (of 7) who contributed coded segments to the respective theme. Expert references identify those participants. Themes reflect cross-case patterns from qualitative content analysis. The distinction between *Origins* (conditions of emergence) and *Persistence* (conditions of maintenance) follows the analytic separation developed in §4.3.1–4.3.2; sub-themes appear in both categories where the same factor operates at different points in the causal chain, but with different mechanisms (e.g., socio-affective drivers generate myths through motivated reasoning; socio-affective stabilisation maintains them through functional rationality and controversy aversion).

5. Discussion

5.1 Main Findings and Their Interpretation

This study examined MYTHSE as an emerging, under-theorised phenomenon through

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problem-centred interviews with seven scholars. The contribution is primarily conceptual: the data generate field-structuring distinctions and testable hypotheses, not prevalence estimates. Three interpretive advances warrant emphasis.

5.1.1 Conceptualising MYTHSE

Experts converged on MYTHSE as socially reinforced, intuitively plausible, and normatively inflected belief patterns whose asserted scope or causal power exceeds what current theory and evidence support — consistent with established work on educational myths (De Bruyckere et al., 2020; Lilienfeld et al., 2010). Three features, however, position MYTHSE as field-specific rather than a subcategory of general educational myths.

First, MYTHSE operate less by misrepresenting learning processes, as neuromyths and instructional illusions typically do (Kirschner et al., 2025), and more by narrowing SE's normative and transformative ambition (Macintyre et al., 2025; Sterling, 2025). The analytic task shifts accordingly: addressing MYTHSE is less about correcting cognitive errors than about preserving the conditions for epistemic and normative coherence in the field.

Second, the interviews surfaced a distinction between MYTHSE proper and *foundational myths* — civilisational-scale assumptions about the human–nature relationship (human dominion, technological progress, endless growth) that generate and stabilise secondary MYTHSE (§4.1). Unlike Brookfield's (2017) hegemonic assumptions, which cover any taken-for-granted belief, foundational myths operate at civilisational scale, naming the worldview-level assumptions Orr (2004) identifies as education's reproduction of unsustainability. Interventions targeting secondary MYTHSE without engaging foundational narratives risk being cosmetic.

Third, experts rejected binary true/false logic for a continuum. Claims such as "SE must be politically neutral" cannot be resolved on empirical grounds alone; they sit at the intersection of evidence, values, and educational purpose (Biesta, 2022). The *myth* / *contested* schema operationalises this and resists the premature closure Costa et al. (2025) identify in SE discourse. Shephard's reservation about the term *myth* (§4.1) illustrates the schema's value: the boundary between 'contested but defensible position' and 'myth' is itself contested, and the *contested* category makes this explicit rather than dissolving it. Reasonable disagreement about which beliefs warrant the label is not a problem for the construct but evidence of the analytic work it is doing.

A cross-cutting observation: MYTHSE are functionally ambivalent. They distort while simultaneously lowering engagement thresholds and providing shared language — which is why purely corrective strategies underperform and why intervention should address the functions myths serve, not only the inaccuracies they reproduce (Sinatra and Jacobson, 2019).

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5.1.2 Prevalence and Examples of MYTHSE

Candidate examples clustered into three mutually reinforcing themes: reductive framings of SE's scope, exaggerated or misattributed causal claims, and delegitimising narratives (§4.2). These patterns echo longstanding critiques of environmental reductionism, behaviourist change models, and depoliticised SE (Macintyre et al., 2025; Sterling, 2024) — and, as experts described encountering them across academic and policy discourses rather than at the margins, the critiques are empirical as much as theoretical.

The *myth* / *contested* classification is analytically consequential. Claims such as "SE must be politically neutral" or "there is no consensus on SE" are partially valid but become problematic when absolutized or strategically mobilised to justify institutional inaction — a dynamic echoing work on ambiguity as a defence of disciplinary autonomy (Shephard and Furnari, 2013). Some MYTHSE therefore function less as false beliefs than as *discursive barriers* protecting institutional routines against transformative demands.

Two limits apply. The interviews yield prevalence *cues*, not *estimates* (Bogner et al., 2018; Von Soest, 2023), and Table 2 classifications reflect participants' own characterisations pending validation. The two full-consensus candidates (#3, #18) nonetheless offer expert-endorsed starting points for constructing refutation texts, given meta-analytic evidence of their effectiveness (Danielson et al., 2025).

5.1.3 Origins, Persistence, Consequences, and Strategies

Two refinements warrant emphasis. First, the separation between origins (emergence) and persistence (maintenance) is analytic, not descriptive. Socio-affective factors generate MYTHSE through motivated reasoning but maintain them through functional rationality, controversy aversion, and interconnected webs of belief (Ecker et al., 2022). Effective interventions should therefore target formation *and* stabilisation — a point elided in accounts treating myths as one-step cognitive errors.

Second, the rejection of the information-deficit explanation by Orr and Trecek-King (§4.3.2) coheres with cumulative evidence that corrective information rarely produces durable belief revision (Ecker et al., 2022). The alternative — mental immunity through inoculation, logic-based debunking, refutational teaching, and critical thinking dispositions — is transferable from adjacent domains (Danielson et al., 2025; Norman et al., 2024; van der Linden, 2023), but must accommodate the normative and politically contested character of sustainability claims. Confronting MYTHSE therefore differs from debunking factual misinformation in one respect: it requires explicit judgement about which claims are empirically settled, which are normatively contested, and which are strategically mobilised to foreclose inquiry.

Structural factors operate less as primary causes than as stabilising conditions — disciplinary silos, audit-oriented governance, limited professional development — echoing research on misalignment between institutional structures and transformative goals (Singer-Brodowski et

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al., 2025) and reinforcing the case for whole-institution approaches (Holst et al., 2024). Consequences appeared at three levels (§4.3.3): institutional effects across the full sample, pedagogical effects in most interviews, societal effects less often but characterised as most serious. Compared with myths documented elsewhere in education, MYTHSE appear particularly prone to depoliticising and de-ambitioning SE. The corollary is practical: confronting MYTHSE is not merely epistemic hygiene — it protects the field's normative core against gradual discursive erosion.

5.2 Implications

The following directions follow from the exploratory design and small purposive sample.

For research. Four priorities follow. First, the *myth* / *contested* schema (Table 2) requires validation through larger-scale survey research mapping prevalence and variation across institutional and disciplinary contexts. Second, the full-consensus candidates (#3 and #18) offer expert-endorsed starting points for designing intervention studies, with one important caveat: refutation-text methodologies have been developed primarily for empirical misconceptions in science domains (Danielson et al., 2025), and #3 (*SE is primarily about conveying content*) is a normative-pedagogical claim rather than an empirical error. Whether refutation-text mechanisms transfer to normatively contested claims, or require adaptation drawing on inoculation approaches developed for politically charged content (van der Linden, 2023), is itself an empirical question worth pursuing. Third, the hypothesis that foundational myths function as generative substrates for secondary MYTHSE (§5.1.1) is directly testable: whether interventions targeting foundational assumptions produce broader downstream effects than surface-level correction warrants experimental examination (Sinatra and Jacobson, 2019). Fourth, the analytic separation of origins and persistence (§4.3.1–4.3.2) calls for longitudinal designs that track formation and stabilisation mechanisms distinctly (Ecker et al., 2022).

For teaching and professional development. The data suggest that MYTHSE circulate among educators across career stages, including senior academics (§4.2). Professional development could therefore incorporate structured opportunities for surfacing and examining prevalent MYTHSE rather than assuming academic expertise confers immunity — a stance consistent with evidence on educators' beliefs and instructional judgement (De Bruyckere et al., 2020; Singer-Brodowski et al., 2025). Table 2 candidates can anchor faculty workshops; the MYTHSE-Navigator (Siegel, 2025) offers practical infrastructure pending evaluation at scale.

For institutional policy. That institutional conditions stabilise MYTHSE (§4.3.1) implies individually targeted interventions are insufficient. The complementarity with whole-institution approaches (Holst et al., 2024) is functional: whole-institution work operates through governance, curriculum, and operational structures, while a myth-critical lens operates on the *beliefs that justify and reproduce* those structures. Without the latter, structural reform risks cosmetic compliance; without the former, belief-revision work risks marginal pedagogical adjustment without systemic effect. Institutions committed to SE may benefit

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from auditing how prevailing structures and the assumptions sustaining them co-produce resistance to transformative change.

5.3 Strengths and Limitations

Strengths. The interdisciplinary sample – spanning sustainability education, cognitive psychology, science communication, and higher education – enables triangulation no single disciplinary standpoint could achieve (Bogner et al., 2018; Von Soest, 2023). The podcast-based format generated rich qualitative data while producing open educational resources supporting broader knowledge mobilisation, consistent with calls for transformative open education (Algers and Wals, 2020; Cook, 2023). Pre-registration and open materials (e.g., interview guide, codebook) strengthen transparency and intersubjectivity (Haven and Van Grootel, 2019).

Limitations and Reflexivity. Five constraints apply. *First*, the seven-expert sample is too small to support claims about the distribution of views within SE scholarship; the findings offer field-structuring cues, not representative evidence. *Second*, the sample concentrates in Anglo-Western and German-speaking scholarship — and the foundational narratives identified in §4.3.1 (human dominion, technological progress, endless growth) are themselves Anglo-Western framings. Whether comparable myths operate in Buen Vivir, Ubuntu, Confucian-ecological, or Indigenous SE traditions remains untested. *Third*, expert-based research risks authority bias (Sagan, 1997), mitigated through disciplinary diversity and Worsnip et al.'s (2025) cautious-deference model but not eliminated. *Fourth*, the public podcast format and the author's dual role as host plausibly induced performance effects and controversy aversion (Cook, 2023), softening the reported prevalence of institutional conflicts and peer critique. *Fifth*, the author's prior conceptual work on MYTHSE entails interpretive proximity and a risk of confirmation bias; pre-registration, transparent coding rules, and the active search for disconfirming evidence mitigated this risk without eliminating it.

6. Conclusion

This study positions MYTHSE as a coherent research phenomenon: socially reinforced, institutionally stabilised, and normatively inflected belief patterns that narrow SE's goals, methods, and legitimacy in identifiable ways. Given the small purposive sample, the contribution is conceptual and hypothesis-generating rather than confirmatory – but the interviews yield distinctions and testable claims prior SE scholarship has not yet articulated as a coherent framework (Siegel, 2026).

Three conclusions follow. First, MYTHSE require a continuum rather than a binary true/false logic. The distinction between straightforwardly misleading claims and contested ones that become problematic only when absolutised is constitutive of the object of study, not a methodological inconvenience to be engineered away. Second, addressing MYTHSE demands more than corrective information. Effective strategies engage cognitive, socio-affective, and

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structural roots through refutational teaching, prebunking, critical thinking dispositions, and institutional professional development – adapted to the normative and politically contested character of sustainability claims (Danielson et al., 2025; Norman et al., 2024; van der Linden, 2023). Third, myth-critical work is field-structuring rather than merely corrective. Examining MYTHSE clarifies what SE is and is not, surfaces assumptions embedded in institutional practice and protects the field's transformative ambition against gradual discursive erosion.

Four research directions follow: validated taxonomies operationalising the *myth* / *contested* distinction, experimental intervention studies building on the expert-consensus candidates identified here, longitudinal tracking of whether MYTHSE shift in response to professional development or policy change, and designs that separate formation from persistence mechanisms. The MYTHSE-Navigator (Siegel, 2025) offers practical infrastructure for this work. Confronting what sustainability education is believed to be – and why – is not peripheral to the field.

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Supplements

- Supplement 1. Preregistration Expert Interview Study: https://doi.org/10.17605/OSF.IO/2ZF67
- Supplement 2. Sample Invitation for the Interview: https://osf.io/nefdc/files/wmekx
- Supplement 3. Basic Interview Guide: https://osf.io/nefdc/files/j9edh
- Supplement 4. Sustainability Education Podcast: https://sustainabilityeducation.captivate.fm/
- Supplement 5. Cleaned Codebook of the Qualitative Content Analysis https://osf.io/nefdc/files/rwuxm

CRediT authorship contribution statement

anonymized: Conceptualization, Methodology, Data Curation, Formal Analysis, Investigation, Writing - Original Draft, Review & Editing.

Disclosure statement

No potential conflict of interest was reported by the author. The author hosts the *Sustainability Education Podcast*, which served as the dissemination vehicle for the interviews; this dual role is discussed in §5.3.

Informed Consent Statement

Informed consent was obtained from all participants prior to data collection.

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Ethics Statement

The study was assessed using the University of St Gallen HSG Ethics Committee checklist. Review by the Ethics Committee was not required. The research was conducted in accordance with the HSG Ethics Code and the basic principles of responsible research.

Data Availability Statement

Interview transcripts, codebook and supplementary materials are openly available on the Open Science Framework (see https://osf.io/nefdc). Audio recordings are accessible via the Sustainability Education Podcast: https://sustainabilityeducation.captivate.fm/

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Conceptualising Myths in Sustainability Education: A Problem-Centred Expert Interview Study

Table 1. Overview of Interviewed Experts

#	Interviewed Expert	Affiliation	Country	Academic Discipline / Expertise	Duration (min)
1	Prof. Dr. David Orr	Oberlin College	USA	Environmental Studies and Politics	84
2	Prof. Dr. Gale Sinatra	University of Southern California	USA	Educational Psychology	47
3	Prof. Dr. Kerry Shephard	University of Otago	New Zealand	Higher Education; Sustainability Education	68
4	Dr. John Cook	University of Melbourne	Australia	Misinformation Research; Cognitive Psychology	75
5	Prof. Dr. Marco Rieckmann	University of Vechta	Germany	Higher Education Development	78
6	Assoc.-Prof. Melanie Trecek-King	Massasoit Community College	USA	Biology; Science Education	74
7	Prof. Dr. Daniella Tilbury	St Catharine's College, University of Cambridge	UK	Geography Education; Sustainability Education	61

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Conceptualising Myths in Sustainability Education: A Problem-Centred Expert Interview Study

Table 2. Discussed Potential Examples of MYTHSE

#	Potential MYTHSE	*n*	Classification	Exemplary Expert References
1	"SE is mere environmental education"	6	Myth	I1-Orr; I2-Sinatra; I3-Shephard; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
2	"SE alone will save the planet / humanity"	2	Myth	I2-Sinatra; I4-Cook
3	"SE is primarily about conveying content (ESD 1)"	7	Myth	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
4	"SE must be politically neutral"	5	Contested	I1-Orr; I3-Shephard; I4-Cook; I5-Rieckmann; I7-Tilbury
5	"Only lecturers who act ideally sustainably should teach SE"	5	Contested	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I5-Rieckmann
6	"SE's purpose is to make students eco-warriors"	4	Contested	I2-Sinatra; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
7	"The higher educated people are, the more sustainably they think/act"	2	Myth	I1-Orr; I6-Trecek-King
8	"SE is too complex for children"	1	Contested	I7-Tilbury
9	"Direct instruction is useless in SE"	3	Myth	I2-Sinatra; I4-Cook; I5-Rieckmann
10	"SE is not urgent — we have time"	2	Myth	I1-Orr; I2-Sinatra
11	"SE is just education done right – old wine in new wineskins"	3	Contested	I3-Shephard; I5-Rieckmann; I7-Tilbury
12	"SE is just another issue to be added to an overcrowded curriculum"	1	Contested	I3-Shephard
13	"SE is just a hype / passing fad"	2	Myth	I1-Orr; I2-Sinatra
14	"SE is not my cup of tea / belongs in a separate subject"	2	Contested	I1-Orr; I4-Cook
15	"SE should focus only on youth (forget adults)"	1	Contested	I7-Tilbury
16	"It's too late for SE"	3	Myth	I1-Orr; I2-Sinatra; I4-Cook
17	"There is no consensus on what SE is"	3	Contested	I1-Orr; I5-Rieckmann; I7-Tilbury
18	"Individual actions of sustainability educators do not matter"	7	Myth	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury

Note. *n* = number of experts (of 7) engaging with the example; references identify them. Classifications reflect participants' own characterisations and are preliminary. **Classification rule.** *Myth*: all engaging participants characterised the claim as misleading. *Contested*: participants diverged in characterisation, typically because a legitimate concern becomes problematic only when

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absolutized or deployed rhetorically; single-mention candidates are retained as tentative under this label, pending broader testing.

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Table 3. Overview of origins, persistence, consequences, and strategies related to MYTHSE

Category	Theme	*n*	Key Mechanisms / Examples	Expert References
Origins	Cognitive drivers	5/7	Heuristic reasoning; system-one dominance; distortion of findings through circulation; false dichotomies	I2-Sinatra; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Socio-affective drivers	6/7	Identity threat; motivated reasoning; dissonance reduction; solution aversion	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I6-Trecek-King; I7-Tilbury
	Institutional conditions	6/7	Fragmented curricula; inadequate teacher education; disciplinary silos; systemic reproduction	I1-Orr; I2-Sinatra; I3-Shephard; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Cultural / foundational narratives	5/7	Deep-seated assumptions (growth, dominion, progress); media simplification; ideological framing	I1-Orr; I2-Sinatra; I4-Cook; I6-Trecek-King; I7-Tilbury
Persistence	Cognitive reinforcement	5/7	Illusory-truth effect; webs of interconnected belief; high psychological cost of revision	I2-Sinatra; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Socio-affective stabilisation	5/7	Functional rationality; thought-terminating clichés; controversy aversion; identity protection	I1-Orr; I2-Sinatra; I4-Cook; I6-Trecek-King; I7-Tilbury
	Structural transmission	5/7	Foundational narratives reproduced across educator generations; curricula and assessment as carriers	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I7-Tilbury

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Category	Theme	*n*	Key Mechanisms / Examples	Expert References
Consequences	Individual / pedagogical	5/7	Doomerism; fear-based teaching; transmission overreliance; illusions of effectiveness	I2-Sinatra; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Institutional	7/7	Superficial practice; box-ticking compliance; marginalisation of critical pedagogy; faculty self-exemption	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Societal	4/7	Discourses of delay; individualisation of responsibility; postponement of structural change	I1-Orr; I4-Cook; I6-Trecek-King; I7-Tilbury
Strategies	Critical thinking / epistemic competence	5/7	Mental immunity; FLICC; intellectual humility; source evaluation; metacognitive awareness	I2-Sinatra; I3-Shephard; I4-Cook; I6-Trecek-King; I7-Tilbury
	Debunking / refutational teaching	7/7	Logic-based approaches; fact–myth–fallacy–fact structure; non-triggering framing	I1-Orr; I2-Sinatra; I3-Shephard; I4-Cook; I5-Rieckmann; I6-Trecek-King; I7-Tilbury
	Prebunking / inoculation	3/7	Active inoculation; FLICC-based creation tasks; epistemic resilience before exposure	I2-Sinatra; I6-Trecek-King; I7-Tilbury
	Teacher education / structural	3/7	Initial teacher education as leverage point; limits of cognitive-only approaches; political and structural preconditions	I1-Orr; I5-Rieckmann; I7-Tilbury

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Conceptualising Myths in Sustainability Education:

A Problem-Centred Expert Interview Study

Responses to the Points Raised by the Reviewers and the Editors

IJSHE-05-2026-0801

Editors

Dear Professor Leal Filho, dear Reviewers,

Thank you for the efficient handling of my manuscript and for the overall very positive evaluation and the appreciative, constructive feedback. In response to Reviewer 1's recommendation, I have elaborated the distinction between MYTHSE and adjacent concepts in the literature review. Below, I address the point raised; original comments appear in grey boxes, followed by my responses. All changes are tracked and highlighted in blue in this letter and the manuscript. I trust the revised manuscript now meets the standards of the *International Journal of Sustainability in Higher Education*.

Reviewer 1

Recommendation: Minor Revision

Comments:
Thank you for the opportunity to review this manuscript. The authors address a novel and timely topic and should be commended for developing a thoughtful and well-executed study. The paper is well-grounded theoretically, the methodology is appropriate, and the findings are clearly presented and discussed. Only minor revisions are needed, mainly to further clarify the distinction between MYTHSE and related concepts in the literature review. Overall, this is a valuable contribution that deserves publication after minor revisions.

Additional Questions:
1. Originality: Does the paper contain new and significant information adequate to justify publication?: The manuscript makes a meaningful contribution by exploring the emerging phenomenon of myths in and about sustainability education (MYTHSE). By developing an initial conceptualization and outlining a future research agenda, it advances discussion in an area that has thus far received little systematic attention. Despite its exploratory nature and limited sample size, the study provides enough originality and conceptual insight to justify publication.

2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the relevant literature in the field and cite an appropriate range of literature sources? Is any significant work ignored?: The paper demonstrates a strong understanding of the relevant literature and draws on a broad, interdisciplinary range of sources spanning sustainability education, educational theory, educational myths, cognitive psychology, misinformation research, and qualitative methodology. The integration of sustainability education and misinformation scholarship is a particular strength. The literature review is comprehensive and provides a clear conceptual foundation for the study. While the manuscript already distinguishes MYTHSE from related concepts such as educational myths and misconceptions, further elaborating its relationship to adjacent concepts, such as misinformation and zombie concepts, earlier in the literature review would strengthen the paper's theoretical positioning and contribution. This would be particularly valuable, given that these distinctions are more prominent in the results section.

3. Methodology: Is the paper's argument built on an appropriate base of theory, concepts, or other ideas? Has the research or equivalent intellectual work on which the paper is based been well designed? Are the methods employed appropriate?: The study is grounded in relevant literature and employs an appropriate exploratory qualitative design. The use of expert interviews and qualitative content analysis is well-suited to the study's aim of conceptualizing an emerging phenomenon. While the small expert sample limits generalizability, the methodology is rigorous, transparent, and appropriate for theory building and conceptual development.

4. Results: Are results presented clearly and analysed appropriately? Do the conclusions adequately tie together the other elements of the paper?: The results are presented clearly and are well organized around the study's three research questions. The findings provide a coherent conceptualisation of MYTHSE, identify prevalent myths, and offer a nuanced analysis of their origins, consequences, and potential intervention strategies. In particular, the discussion of cognitive, socio-affective, institutional, and cultural drivers, as well as the pedagogical, institutional, and societal consequences of MYTHSE, is insightful and well developed. The proposed strategies for addressing myths are also clearly linked to the findings.

The conclusions effectively integrate the empirical results with the study's conceptual objectives and broader theoretical framing.

5. Implications for research, practice and/or society: Does the paper identify clearly any implications for research, practice and/or society? Does the paper bridge the gap between theory and practice? How can the research be used in practice (economic and commercial impact), in teaching, to influence public policy, in research (contributing to the body of knowledge)? What is the impact upon society (influencing public attitudes, affecting quality

of life)? Are these implications consistent with the findings and conclusions of the paper?: The paper identifies clear and well-developed implications for research, teaching and professional development, and institutional policy. In particular, the research implications are strong, outlining a coherent agenda for future studies, including validation of the proposed myth/contested classification, intervention studies, experimental testing of foundational myths, and longitudinal research on the formation and persistence of MYTHSE. The implications for teaching and professional development are closely linked to the findings and provide practical guidance for addressing myths. The implications for institutional policy are also consistent with the study's conclusions. The paper successfully bridges theory and practice.

6. Quality of Communication: Does the paper clearly express its case, measured against the technical language of the field and the expected knowledge of the journal's readership? Has attention been paid to the clarity of expression and readability, such as sentence structure, jargon use, acronyms, etc.: Yes. The paper is well written and communicates its arguments convincingly. The structure is logical, and the language is suitable for an academic audience interested in sustainability education. Technical concepts are explained sufficiently, and the manuscript remains accessible despite its interdisciplinary scope and complexity.

I thank reviewer 1 for this encouraging assessment and fully agree that anticipating the conceptual distinctions between MYTHSE and adjacent concepts earlier in the manuscript strengthens its theoretical positioning and better prepares the results section.

I have added a new paragraph to the literature review (§2.1, "Situating MYTHSE among adjacent concepts," highlighted in blue). It differentiates three analytic levels: misinformation and disinformation as properties of messages (Ecker et al., 2022; van der Linden, 2023), misconceptions and "zombie concepts" as properties of individual cognition (Sinatra and Jacobson, 2019), and myths as socially stabilized patterns of shared meaning (De Bruyckere et al., 2020; Lilienfeld et al., 2010). The paragraph specifies how these levels interact – misinformation as a vehicle of myth circulation; persistent misconceptions hardening into myths once socially normalized – and closes by locating MYTHSE within this landscape. The new paragraph reads:

> **Defining MYTHSE.** Research in educational psychology documents how scientifically unsupported yet widely believed assumptions about teaching and learning shape instructional decisions and institutional policy despite counterevidence (De Bruyckere et al., 2020; Kirschner et al., 2025; Lilienfeld et al., 2010). In this study, myths in and about sustainability education (MYTHSE) refer to widely held but unfounded, oversimplified, or misleading beliefs about the aims, content, approaches, or societal role of SE. MYTHSE are best situated on a continuum from well-supported claims to clearly misleading overgeneralisations, with a contested grey zone of plausible but unsettled beliefs – a middle ground particularly relevant in SE, where normative and empirical dimensions intertwine (Costa et al., 2025; De Bruyckere et al., 2020; Siegel, 2026).

Situating MYTHSE among adjacent concepts. Myth, misinformation, and misconception are often used interchangeably, yet they operate at different epistemic and analytic levels (e.g., Steins et al., 2022). Misinformation and disinformation denote properties of *messages*: false or misleading content shared without or with intent to deceive (Ecker et al., 2022; van der Linden, 2023). Misconceptions designate properties of *individual cognition*: coherent yet flawed mental models that, where they survive repeated refutation, persist as "zombie concepts" (Sinatra and Jacobson, 2019). Myths, by contrast, denote *socially stabilized patterns of shared meaning*: beliefs that circulate as taken for granted in professional discourse and institutional routine (De Bruyckere et al., 2020; Lilienfeld et al., 2010). These levels interact without collapsing into one another: misinformation can serve as a vehicle through which myths spread, and individual misconceptions can harden into myths once socially normalized – yet message accuracy, cognitive structure, and social stabilization call for different diagnoses and responses. Within this nomological network, MYTHSE differ from general educational myths, which concern learning and teaching processes, and from environmental or scientific misconceptions, which concern domain-specific factual knowledge: their object is SE itself.

Reviewer 2

Recommendation: Accept

Comments:
This is a fascinating article that is very well constructed methodologically and well written.

I do not have the technical educational psychology background to give this a detailed critique, but rather read this as an academic with experience in sustainability as a subject area and higher education leader engaged in efforts to extend understanding of sustainability across disciplines and academic programmes in our institutional context.

I agreed to review this paper drawn in by the title as I regularly have to engage in efforts to 'myth-bust' both with respect to limited understanding of colleagues about the reach of sustainability and to challenge simplistic framings around SDGs whilst at the same time trying not to overwhelm both students and staff that it is about everything.

Whilst I recognise the limitations of the study which are well-rehearsed by the author, the discussion and exploration of implications provide educational leaders and sustainability educators with excellent food for thought on their strategies for their own teaching and learning on sustainability but also institutional level engagements (and beyond).

Additional Questions:
1. Originality: Does the paper contain new and significant information adequate to justify

publication?: Yes

2. Relationship to Literature: Does the paper demonstrate an adequate understanding of the relevant literature in the field and cite an appropriate range of literature sources? Is any significant work ignored?: Yes

3. Methodology: Is the paper's argument built on an appropriate base of theory, concepts, or other ideas? Has the research or equivalent intellectual work on which the paper is based been well designed? Are the methods employed appropriate?: yes

4. Results: Are results presented clearly and analysed appropriately? Do the conclusions adequately tie together the other elements of the paper?: Yes

5. Implications for research, practice and/or society: Does the paper identify clearly any implications for research, practice and/or society? Does the paper bridge the gap between theory and practice? How can the research be used in practice (economic and commercial impact), in teaching, to influence public policy, in research (contributing to the body of knowledge)? What is the impact upon society (influencing public attitudes, affecting quality of life)? Are these implications consistent with the findings and conclusions of the paper?: Yes

6. Quality of Communication: Does the paper clearly express its case, measured against the technical language of the field and the expected knowledge of the journal's readership? Has attention been paid to the clarity of expression and readability, such as sentence structure, jargon use, acronyms, etc.: Yes

I sincerely thank reviewer 2 for this generous assessment and the recommendation to accept. I am particularly pleased that the paper resonates with the reviewer's institutional-leadership experience of "myth-busting" – precisely the practice context the study aims to inform, at both the level of teaching and institutional engagement. As no revisions were requested, the manuscript is unchanged beyond the addition described in my response to Reviewer 1.

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